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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,966	06/20/2003	Clyde D. Calhoun	52769US006	6567
32692	7590	04/20/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			JUSKA, CHERYL ANN	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/600,966

Applicant(s)

CALHOUN ET AL.

Examiner

Cheryl Juska

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2005.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.  
4a) Of the above claim(s) 1-18 and 33-41 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 19-32 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 20 June 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02/04/05.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I, claims 19-32, in the reply filed on February 2, 2005, is acknowledged. Claims 1-18 and 33-41 are withdrawn as non-elected.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 19-32 are rejected under 35 U.S.C. 102(b) as anticipated by GB 1,169,621 assigned to Yamanashi.

Applicant claims a method of making a unitary polymer substrate having a napped surface comprising the steps of (a) laminating a surface of a thermoplastic substrate to template surface formed of a release material and having microdepressions and (b) delaminating said thermoplastic substrate from the template surface such that a plurality of microfibers are generated on the substrate surface.

This processes of laminating and delaminating a thermoplastic substrate to form pile-like fibers on the surface of said substrate is well known in the art as tack spinning. For example, Yamanashi teaches said tack spinning process includes the steps of (a) providing a thermoplastic substrate, (b) providing a heated matrix having a plurality of conical depressions therein, (c)

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continuously heating said substrate until the surface is molten, (d) pressing said molten face into the depressions of the matrix, (e) cooling the backside of the substrate, (f) delaminating the substrate from the matrix, and (g) allowing said thermoplastic substrate to set (page 1, lines 42-65). The depressions may be present in an amount ranging from 120 to 2000 depressions per  $\text{cm}^2$  (page 2, lines 1-4). Figure 4 shows fibers having tapered and curled ends.

Thus, applicant's claim 19 is known in the art with the exception that (a) the depression are microdepressions, (b) the template is formed of a release material, and (c) the fibers formed are microfibers. However, it is argued these features structural features in a method claim and do not manipulatively effect the method steps of laminating and delaminating. As such, said limitations are not given patentable weight at this time. It is suggested applicant amend the claims to include an active step of providing the desired structural features (e.g., the step of "providing a template surface of a release material having a plurality of microdepressions"). Hence, claim 19 is rejected as being anticipated by the cited Yamanashi reference. With respect to the limitations of claims 20-32, it is also argued the limitations of these claims are met by the teachings of Yamanashi. In the event said limitations are given weight, the following obviousness rejections are made.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1,169,621 assigned to Yamanashi in view of US 4,451,419 issued to Bye et al. and US 4,076,874 issued to Giovanelli et al.

In the alternative, it is argued that said claims are obvious to one skilled in the art. First, it is known that the size and shape of the depressions can be varied to produce correlating changes in the fiber size, cross sectional shape, and length. Note Bye's teaching "the nature of the pile (i.e., the fibril density and length) depends upon the depth and size of the cavities [depressions]" (col. 1, lines 28-42). Hence, it would have been readily obvious to one of ordinary skill in the art to modify the size and shape of the depressions, including an undercut-shaped or partial sphere shaped, in order to obtain a desired pile. A change in shape or size is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 149 USPQ 47 and *In re Rose*, 105 USPQ 237, respectively.

Additionally, it is known in the art that the length and size of the fibers can be modified by varying the heating and cooling temperatures and the drawing or delamination speed. Note Bye's teaching "the length of the individual fibrils...depends upon the length that can be drawn out from the sheet before the fibrils break and also the position at which the fibrils break" (col. 2, lines 1-4). Bye continues to discuss the importance of temperature in determining the pile fiber structure (col. 2, lines 5-30). Yamanashi states, "The adherence of the plastic to the walls of the depressions differs according to the local temperature of the molding drum as well as the local cooling of the laminate and also according to the shape and diameter of depressions. Thus when the plastic is withdrawn, the hair-like filaments will all differ in length, the length being from 1.5-3 times the depth of the substantially conical depressions" (page 3, lines 34-44). Hence, it

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would be readily obvious to one skilled in the art to manipulate the process parameters including heating and cooling temperatures, angle of delamination, and rate of delamination in order to obtain the desired fiber cross section and length. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 205 USPQ 215.

Yamanashi is silent with respect to the release material. However, the use of said release materials for said template surface is known in the art. For example, Giovanelli teaches a tack spinning process wherein the backing roller or template surface is formed of a heat-resistant, resilient material, such as a non-stick polytetrafluoroethylene material or a silicone material (col. 2, lines 49-57). Hence, it would have been readily obvious to one skilled in the art to employ a release material for the template surface in order to facilitate the delamination process and to minimize clogging of the depressions. Additionally, it would have been obvious to one skilled in the art to employ a polymer foam or a screen release material as the resilient material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. Therefore, claims 19-32 are rejected as being obvious over the cited prior art.

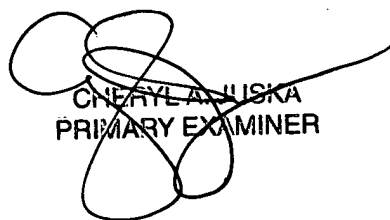
### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
7. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Cheryl Juska whose telephone number is 571-272-1477. The examiner can normally be reached on Monday-Friday 10am-6pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached at 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



CHERYL A. JUSKA  
PRIMARY EXAMINER

cj  
April 18, 2005